In the Claims:

Please cancel claims 33, and 36-46 without prejudice or disclaimer.

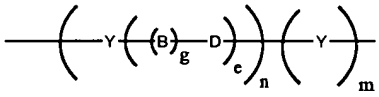
Please add the following new claims:

--47. A conductive oligomer with an ethyl-pyridine protected sulfur atom.

48. A conductive oligomer with a trimethylsilylethyl protected sulfur atom.

~~49. A composition comprising a conductive~~ oligomer covalently ~~attached~~ to a nucleoside.

50. A composition according to claim 49 wherein said conductive oligomer has the formula:



wherein

Y is an aromatic group;

n is an integer from 1 to 50;

g is either 1 or zero;

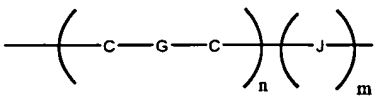
e is an integer from zero to 10;and

m is zero or 1;

wherein when g is 1, B-D is a conjugated bond selected from -C≡C-, -CH=CH-, -CR=CR-, -CH=CR-, -CR=CH-, -NH-CO-, -NR-CO-, -CO-NH-, -CO-NR-, -N=N-, -CO-O-, -O-CO-, -CS-O-, -O-CS-, -CH=N-, -CR=N-, -N=CH- and -N=CR-, -SiH=SiH-, -SiR=SiH-, -SiR=SiH-, -SiR=SiR-, -SiH=CH-, -SiR=CH-, -SiH=CR-, -SiR=CR-, -CH=SiH-, -CR=SiH-, -CH=SiR-, -CR=SiR-, wherein R is a substitution group selected from alkyl, alcohol, aromatic, amino, amido, nitro, ether, ester, aldehyde, sulfonyl, silicon moiety, halogen, sulfur containing moiety, phosphorus containing moiety, and ethylene glycol; and

wherein when g is zero, e is 1 and D is preferably carbonyl, or a heteroatom moiety, wherein the heteroatom is selected from oxygen, sulfur, nitrogen or phosphorus.

51. A composition according to claim 49 wherein said conductive oligomer has the formula:



wherein

n is an integer from 1 to 50;

m is 0 or 1;

C is carbon;

J is carbonyl or a heteroatom moiety, wherein the heteroatom is selected from the group consisting of nitrogen, silicon, phosphorus, sulfur; and

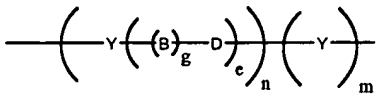
G is a bond selected from single, double or triple bonds, wherein when G is a single bond, two R groups are attached to each C, and when G is a double bond, one R group is attached to each C, wherein R is a substitution group selected from hydrogen, alkyl, alcohol, aromatic, amino, amido, nitro, ether, ester, aldehyde, sulfonyl, silicon moiety, halogen, sulfur containing moiety, phosphorus containing moiety, and ethylene glycol.

52. A composition according to claim 49 wherein said nucleoside is part of a nucleic acid.

53. A composition according to claim 49 further comprising a covalently attached electron transfer moiety (ETM).

54. A composition comprising a conductive oligomer covalently attached to a phosphoramidite nucleoside.

55. A composition according to claim 52 wherein said conductive oligomer has the formula:



wherein

Y is an aromatic group;

n is an integer from 1 to 50;

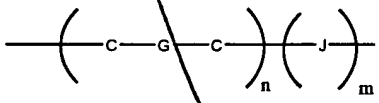
g is either 1 or zero;

e is an integer from zero to 10;and

m is zero or 1;

wherein when g is 1, B-D is a conjugated bond; selected from -C≡C-, -CH=CH-, -CR=CR-, -CH=CR-, -CR=CH-, -NH-CO-, -NR-CO-, -CO-NH-, -CO-NR-, -N=N-, -CO-O-, -O-CO-, -CS-O-, -O-CS-, -CH=N-, -CR=N-, -N=CH- and -N=CR-, -SiH=SiH-, -SiR=SiH-, -SiR=SiH-, -SiR=SiR-, -SiH=CH-, -SiR=CH-, -SiH=CR-, -SiR=CR-, -CH=SiH-, -CR=SiH-, -CH=SiR-, -CR=SiR-, wherein R is a substitution group selected from alkyl, alcohol, aromatic, amino, amido, nitro, ether, ester, aldehyde, sulfonyl, silicon moiety, halogen, sulfur containing moiety, phosphorus containing moiety, and ethylene glycol; and wherein when g is zero, e is 1 and D is preferably carbonyl, or a heteroatom moiety, wherein the heteroatom is selected from oxygen, sulfur, nitrogen or phosphorus.

56. A composition according to claim 52 wherein said conductive oligomer has the formula:



wherein

n is an integer from 1 to 50;

m is 0 or 1;

C is carbon;

J is carbonyl or a heteroatom moiety, wherein the heteroatom is selected from the group consisting of nitrogen, silicon, phosphorus, sulfur; and

G is a bond selected from single, double or triple bonds, wherein when G is a single bond, two R groups are attached to each C, and when G is a double bond, one R group is attached to each C, wherein R is a substitution group selected from hydrogen, alkyl, alcohol, aromatic, amino, amido, nitro, ether, ester, aldehyde, sulfonyl, silicon moiety, halogen, sulfur containing moiety, phosphorus containing moiety, and ethylene glycol.

57. A composition comprising a conductive oligomer covalently attached to a CPG-nucleoside.

58. An electrode comprising:

a) a monolayer comprising a passivation agent layer comprising conductive oligomers; and

b) at least one nucleic acid covalently attached to said electrode with a spacer.

59. A composition according to claim 56 wherein said spacer is a conductive oligomer.

60. A composition according to claim 56 wherein said spacer is an insulator.

61. A composition according to claim 56 wherein said passivation agent layer further comprises insulators.

62. A composition comprising a phosphoramidite nucleoside covalently linked to a metallocene.

63. A composition according to claim 62 wherein said nucleoside comprises a ribose and said metallocene is covalently attached to the 2' position of said ribose.

64. A composition according to claim 62 wherein said metallocene is covalently attached to the base of said nucleoside.

65. A composition according to claim 62 wherein said metallocene is ferrocene.